

PC-I-16. Effect of Early Exposure on the Crestal Bone Loss around Implants: Comparison between Exposed and Non-exposed Implants in Identical Subjects

Tae-Hyung Kim*, Dong-Won Lee, Ji-Hyun Lee, Ik-Sang Moon

Department of periodontology, Yongdong Severance Dental Hospital,
College of Dentistry, Yonsei University

Background

Plaque accumulation, bacterial colonization and epithelial invagination can occur during osseointegration period when a direct communication between the implant surface and the oral environment is established, and it can be a harmful factor resulting in early crestal bone loss.

Materials and Methods

The present study population consisted of 371 patients who were treated with dental implants. 865 threaded conical implants were placed following the 2-stage surgical protocol (443 in maxilla, 422 in mandible). Among the study population, there were 22 subjects who had both early exposed and non-exposed implants (26 early exposed and non-exposed implants in each). Total early exposure rate was examined, and the crestal bone losses of exposed and non-exposed implants in identical subjects were compared with Wilcoxon Signed Ranks Test.

Results

40 implants in 33 patients were exposed to the oral cavity through the mucosa before uncovering surgery (4.6%), 16 implants in the maxilla presented spontaneous early exposure (3.6%) and 24 implants in the mandible (5.7%).

The crestal bone loss was examined when the final restorations were inserted. The mean crestal bone loss of exposed implants was $0.43\text{mm} \pm 0.51$, ranged from loss of 0.00mm to 2.15mm. The mean crestal bone loss of non-exposed implants was $0.23\text{mm} \pm 0.35$, ranged from loss of 0.00mm to 1.20mm. Wilcoxon Signed Ranks Test revealed that there was statistically significant difference between the crestal bone loss of exposed and non-exposed implants ($p=0.006$).

Conclusion

The early exposure of the implant seems to facilitate peri-implant crestal bone loss. Initial healing phase follow-up may be critical for implant success.